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## GAS SENSOR DESIGN AND METHOD FOR USING THE SAME

## ABSTRACT OF THE DISCLOSURE

A gas sensor comprises a first electrode and a reference electrode with an electrolyte disposed therebetween, wherein the first electrode and said reference electrode are in ionic communication, wherein the reference electrode has a surface on a side of the reference electrode opposite the electrolyte and the surface has a surface area. The gas sensor also comprises a reference gas channel in fluid communication with the reference electrode, wherein at least a portion of the surface of the reference electrode physically contacts at least a portion of the reference gas channel, and wherein the portion of the reference electrode in physical contact with the reference gas channel is less than about 90% of the surface area.